REMARKS

The Examiner rejected the claims under 35 U.S.C. § 102(b) and 103(a) in view of Mori, Kobayashi, Tomoeda, and Arken. The issues at hand appear to be well-articulated by the Examiner in the office action on page 6, lines 14-17 where the Examiner states:

> *"In one embodiment of the invention as disclosed in the specification, applicant appear to take rotationally to indicate that the flow of liquid applied to the substrate is a roughly circular direction around a central axis of the substrate when viewed from above."*

Claim 1 has been amended to more specifically define the location of the outlet and the flow created by the outlet. The outlet is located off-centered from a central axis of the substrate normal to a surface of the substrate. Liquid is directed from the nozzle at an angle so that the liquid flows rotationally over the surface about the central axis. There is thus rotational flow over the surface due to the position of the nozzle and its angle.

With respect to Mori, Figure 3, there is rotational flow from the anode 105. The rotational flow is about an axis approximately where the "101" reference is in Figure 3 and extending into the paper. The rotational flow is not over a lower surface of the substrate 107 and is not about a central axis of the substrate 107 normal to the lower surface thereof.

With respect to Kobayashi, Figure 2, outlets 24 are located off-center with respect to a center line normal to the surface 8. However, flow over the surface 8 is radially inwardly. The flow over the surface 8 is not rotationally about a center line normal to the surface 8.

With respect to Tomoeda, the Examiner argued in the office action of November 14, 2000, page 8, that, although Tomoeda is silent regarding the liquid flowing rotationally, it would be obvious to one of ordinary skill in the art. It is Applicant's position that there is no such suggestion in Tomoeda. Tomoeda does not relate to materials deposition but materials removal. In Figure 12, injection nozzles 160 are provided for injecting cleaning water to a lower surface of a substrate. The water impinges at high speed onto the surface to clean it and there is no need for uniform exposure to a material that has to be deposited as in the invention at hand.

Referring to Arken, an outlet 44 is in line with a central axis of a substrate 42. The position of the outlet 44 does not allow for the creation of rotational flow about the central axis of the substrate 44 normal to the surface 48.

As such, the Applicant submits that the claims are not anticipated or obvious over these cited references. Applicant, accordingly, respectfully requests withdrawal of the 35 U.S.C. § 102(b) and 35 U.S.C. § 103(a) rejections of the claims.

Applicant submits herewith an Information Disclosure Statement including U.S. Patent No. 6,042,712. Rotational flow is illustrated in Figure 14. However, the rotational flow is due to rotation of the substrate 104 in the direction 212. The nozzle 104A in Figure 12 is not located off-center with respect to a center line 198. The rotation

of the flow over the lower surface 202 is thus not due to any off-center location of the nozzle 104A or its angle.

If there are any additional charges, please charge Deposit Account No. 02-2666. If a telephone interview would in any way expedite the prosecution of the present application, the Examiner is invited to contact Stephen M. De Klerk at (408) 720-8300.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

1. (Twice Amended) A method of applying a [liquid] material onto a substrate surface, comprising:

[placing] exposing a surface of a substrate [surface within] to a liquid, containing in a material, in an enclosure;

[introducing a liquid material into the enclosure;] and

directing [the] more of the liquid from an outlet which is off-center from a central axis of the substrate normal to the surface, at an angle [material angularly toward the substrate surface] so that the liquid [material] flows rotationally [upon contact with the substrate] over the surface about the central axis, the material depositing on the surface.

2. (Twice Amended) A method of applying a [liquid] material as in claim 1, further comprising:

pressing the substrate against the enclosure to form a seal.

3. (Twice Amended) A method of applying a [liquid] material as in claim 1, further comprising:

[providing a cathode contact;]

coupling [the] a cathode contact to the substrate surface[;],

[providing an anode coupled to the cathode; and]

wherein the [liquid] material [is an electrolytic bath to form an electrochemical cell.] plates onto the surface.

4. (Twice Amended) A method of applying a [liquid] material as in claim 3, further comprising:

forming a metallic film on the substrate surface.

5. (Amended) A method of applying a [liquid] material as in claim 4, wherein the metallic film includes copper.

18. (Twice Amended) A method of electroplating a material onto a substrate surface within an enclosed chamber, comprising:

securing a substrate within an opening in a chamber so that [the substrate] a surface of the substrate faces an interior of the chamber [interior];

coupling a cathode to the substrate [surface];

[coupling an anode to the cathode; and]

introducing [a liquid] an electrochemical [bath to] liquid into the chamber [interior and directing] through an outlet which is off-center from a central axis of the substrate normal to the surface, at an angle so that the liquid [angularly toward the substrate surface so that the liquid] flows rotationally [upon contact with the substrate]

over the surface about the central axis, material plating out of the liquid onto the surface.

19. (Twice Amended) A method of electroplating a material as in claim 18, wherein introducing a liquid further includes spraying the liquid out of a plurality of spray outlets at least two of the outlets contributing to said rotational flow about the axis over the surface.

21. (Twice Amended) A method of electroplating a material as in claim 19, wherein the spray outlets are angled at approximately 20 to 60 degrees [from vertical] relative to the surface.

22. (Amended) A method of electroplating a material as in claim 21, wherein said liquid is directed radially outward with respect to the [center of the substrate surface] axis.

23. (Amended) A method of electroplating a material as in claim 22, wherein said liquid [is directed circumferentially with respect to a perpendicular direction toward the substrate surface] has a circumferential component and a radical component relative to the axis.

27. (Amended) A method of applying a [liquid] material onto a substrate surface as in claim 1, wherein introducing the liquid further includes spraying the liquids out of a plurality of spray outlets at least two of the outlets contributing to said rotational flow about the axis over the surface.

28. (Amended) A method of applying a [liquid] material onto a substrate surface as in claim 27, wherein the two spray outlets are angled at approximately 20 to 60 degrees from [vertical] the surface.

29. (Amended) A method of applying a [liquid] material onto a substrate surface as in claim 1, wherein the liquid is directed radially outward with respect to the center of the substrate surface.

30. (Amended) A method of applying [liquid] material onto a substrate surface as in claim 1, wherein the liquid [is directed circumferentially with respect to a perpendicular direction toward the substrate surface] has a circumferential component and a radial component relative to the axis.

31. (Amended) A method of applying a [liquid] material onto a substrate surface as in claim 27, wherein at least one of the plurality of spray outlets is pointed in a perpendicular direction toward the center of the substrate surface.

32. (Amended) A method of applying a [liquid] material onto a substrate surface as in claim 27, wherein the plurality of spray outlets includes at least four spray outlets forming a cross pattern.

33. (Amended) A method of applying a [liquid] material onto a substrate surface as in claim 27, wherein the plurality of spray outlets further includes at least one spray outlet located at the center of the cross pattern.